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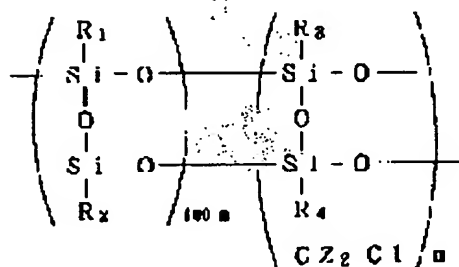
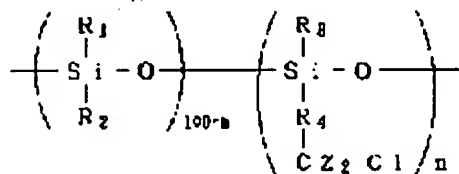
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## (54) POLYMER FOR FORMING OPTICAL WAVEGUIDE AND PRODUCTION OF POLYSILOXANE-BASED OPTICAL WAVEGUIDE

## (57)Abstract:

PURPOSE: To improve the sectional shape and processing efficiency of an optical waveguide by forming a specific copolymer layer on a lower clad layer formed on a substrate, insolubilizing the copolymer layer, and removing unnecessary parts from the copolymer layer to form a core layer.

CONSTITUTION: A lower clad layer is formed by applying a polysiloxane for cladding to a substrate. A core layer is formed by applying, to the lower clad layer, a (co)polymer having repeating units of formula I or II wherein R1, R2, and R3 are each an optionally deuterated or halogenated alkyl group represented by Cn2+1 wherein Y is H, deuterium, or halogen; and n is 5 or lower, an optionally deuterated or halogenated phenyl group represented by C6Y5; R4 is an optionally deuterated or halogenated phenylene group represented by C6Y4; Z is H or deuterium; and m is 100 or lower, irradiating it with far ultraviolet rays or electron beams to insolubilize it, and removing unnecessary parts from it. Then, on the core layer is formed an upper clad layer.



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